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EXAMINER	
MCCARTHY, CHRISTOPHER S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/090,488	NOVICK, YORAM	
	Examiner	Art Unit	
	Christopher S. McCarthy	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-136* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-136* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *10/28/04*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 6, 7, 9, 10, 30, 32, 35, 36, 38, 39, 42, 59-69, 71, 74, 75, 77, 78, 98, 100, 103, 104, 106, 107, 127-136 are rejected under 35 U.S.C. 102(e) as being anticipated by Tabuchi et al. U.S. Patent Application Publication US2004/0078399A1.

As per claim 1, Tabuchi teaches a data backup and recovery system for use with at least one server interconnected with at least one storage device (paragraph 0023), said data backup and recovery system comprising: at least one data recovery device (paragraph 0023); at least one data recovery storage device associated with and controlled by said at least one data recovery device (paragraph 0030, 0034); and at least one data communication monitor for providing to said at least one data recovery device at least control information bearing an order stamp including an order mark and a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device, said at least one data recovery device being responsive to at least said control information bearing an order stamp for storing data on said at least one data recovery storage device in a manner which enables

reconstruction of a representation of a complete sequence of data communications for each of said at least one data communication monitor and enables reconstruction of representation of said data communications at a given earlier time but does not require that the data be sent to said at least one data recovery device in a given order and stored on said at least one data recovery storage device in a given order (paragraph 0030, 0036, 0040).

As per claim 3, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein at least one of said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device (paragraph 0023, 0030).

As per claim 6, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said data communications comprise data updates (paragraph 0014).

As per claim 7, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said reconstruction of a representation of said data communications at a given earlier time guarantees that if the order stamp of a first update is smaller than the order stamp of a second update, the second update is not stored on said at least one data recovery storage device unless the first update is stored on said at least one data recovery storage device (paragraph 0014, 0036).

As per claim 9, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said at least one data communication monitor is associated with network elements of a storage area network (paragraph 0023).

As per claim 10, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein at least one of said control information and said data communications is

communicated from said at least one data communication monitor to said at least one data recovery device via a network (paragraph 0025, 0026).

As per claim 30, Tabuchi teaches a data backup and recovery system for use with at least one server interconnected with at least one storage device, said data backup and recovery system comprising: at least one data recovery device (paragraph 0023); at least one data recovery storage device associated with and controlled by said at least one data recovery device (paragraph 0023); and data communication monitors for providing to said at least one data recovery device at least control information bearing an order stamp including an order mark and a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device, said at least one data recovery device being operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel and not requiring that the data be received by said at least one data recovery device in a given order (paragraph 0030, 0034, 0040).

As per claim 32, Tabuchi teaches a data backup and recovery system according to claim 30 and wherein at least one said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device (paragraph 0023, 0030).

As per claim 35, Tabuchi teaches a data backup and recovery system according to claim 30 and wherein said data communications comprise data updates (paragraph 0014).

As per claim 36, Tabuchi teaches a data backup and recovery system according to claim 30 and wherein said reconstruction of a representation of said data communications at a given earlier time guarantees that if the order stamp of a first update is smaller than the order stamp of

a second update, the second update is not stored on said at least one data recovery storage device unless the first update is stored on said at least one data recovery storage device (paragraph 0014, 0036).

As per claim 38, Tabuchi teaches a data backup and recovery system according to claim 30 and wherein at least one said data communication monitor is associated with network elements of a storage area network (paragraph 0023).

As per claim 39, Tabuchi teaches a data backup and recovery system according to claim 30 and wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a network (paragraph 0025, 0026).

As per claim 42, Tabuchi teaches a data backup and recovery system according to claim 30 and wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a storage area network (paragraph 0023).

As per claim 59, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said reconstruction of a representation comprises sending said data communications from said at least one data recovery storage device to said at least one storage device (paragraph 0036, 0037).

As per claim 60, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said reconstruction of a representation comprises employing said at least one data backup and recovery system as at least one of said at least one server and said at least one storage device (paragraph 0022-0025).

As per claim 61, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said at least one server and said at least one storage device are interconnected via a local area network (LAN) (paragraph 0023).

As per claim 62, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said at least one server and said at least one storage device are interconnected via a storage area network (SAN) (paragraph 0023).

As per claim 63, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said at least one storage device is a network attached storage (NAS) device (paragraph 0023).

As per claim 64, Tabuchi teaches a data backup and recovery system according to claim 61 and wherein said at least one data communication monitor monitors data communications between said at least one server and said at least one storage device over said LAN (paragraph 0023).

As per claim 65, Tabuchi teaches a data backup and recovery system according to claim 62 and wherein said at least one data communication monitor monitors data communications between said at least one server and said at least one storage device over said SAN (paragraph 0023).

As per claim 66, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said at least one server comprises said at least one data communication monitor (paragraph 0030).

As per claim 67, Tabuchi teaches a data backup and recovery system according to claim 1 and wherein said at least one storage device comprises said at least one data communication monitor (paragraph 0030).

As per claim 68, Tabuchi teaches a data backup and recovery system according to claim 62 and wherein said SAN comprises said at least one data communication monitor (paragraph 0023).

As per claim 69, Tabuchi teaches a method for data backup and recovery for use with at least one server interconnected with at least one storage device, the method comprising: providing at least one data recovery device; providing at least one data recovery storage device associated with and controlled by said at least one data recovery device; and providing at least one data communication monitor operative to perform: monitoring the data communication between said at least one server and said at least one storage device; creating at least control information bearing an order stamp regarding said data communications between corresponding ones of said at least one server and said at least one storage device; and sending said monitored data communications and said control information to said at least one data recovery device, said at least one data recovery device responding to said at least said control information in a manner which enables reconstruction of a complete sequence of data communications for each of said at least one data communication monitor and enables reconstruction of a representation of said data communications at a given earlier time but not requiring that said sending said monitored data communications and said control information to said at least one data recovery device be in a given order and stored on said at least one data recovery storage device in a given order (paragraph 0023, 0030, 0034, 0036, 0040).

As per claim 71, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device (paragraph 0023, 0030).

As per claim 74, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said data communications comprise data updates (paragraph 0014).

As per claim 75, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said reconstruction of a representation of said data communications at a given earlier time guarantees that if the order stamp of a first update is smaller than the order stamp of a second update, the second update is not stored on said at least one data recovery storage device unless the first update is stored on said at least one data recovery storage device (paragraph 0014, 0036).

As per claim 77, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at lest one data communication monitor is associated with network elements of a storage area network (paragraph 0023).

As per claim 78, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a network (paragraph 0025, 0026).

As per claim 98, Tabuchi teaches A method for data backup and recovery for use with at least one server interconnected with at least one storage device, said method comprising: providing at least one data recovery device; providing at least one data recovery storage device associated with and controlled by said at least one data recovery device; providing at least one

data communication monitor operative to perform: monitoring the data communication between said at least one server and said at least one storage device; creating at least control information bearing an order stamp including an order mark and a time mark regarding said data communications between corresponding ones of said at least one server and said at least one storage device; and sending said monitored data communications and said control information to said at least one data recovery device, receiving said at least control information by said at least one data recovery device; and storing said data on said at least one data recovery storage device in parallel and without requiring that the data be received by said at least one data recovery device in a given order (paragraph 0023, 0030, 0034, 0036, 0040).

As per claim 100, Tabuchi teaches a method for data backup and recovery according to claim 98 and wherein at least one of said control information and said data communications is communicated from said data communication monitors to said data recovery device via a storage area network (paragraph 0023, 0030).

As per claim 103, Tabuchi teaches a method for data backup and recovery according to claim 98 and wherein said data communications comprise data updates (paragraph 0014).

As per claim 104, Tabuchi teaches a method for data backup and recovery according to claim 98 and wherein said reconstruction of a representation of said data communications at a given earlier time guarantees that if the order stamp of a first update is smaller than the order stamp of a second update, the second update is not stored on said at least one data recovery storage device unless the first update is stored on said at least one data recovery storage device (paragraph 0036).

As per claim 106, Tabuchi teaches a method for data backup and recovery according to claim 98 and wherein said at least one data communication monitor is associated with network elements of a storage area network (paragraph 0023).

As per claim 107, Tabuchi teaches a method for data backup and recovery according to claim 98 and wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a network (paragraph 0025, 0026).

As per claim 127, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said reconstruction of a representation comprises sending said data communications from said at least one data recovery storage device to said at least one storage device (paragraph 0036, 0037).

As per claim 128, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said reconstruction of a representation comprises employing said at least one data backup and recovery system as at least one of said at least one server and said at least one storage device (paragraph 0022, 0025).

As per claim 129, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at least one server and said at least one storage device are interconnected via a local area network (LAN) (paragraph 0023).

As per claim 130, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at least one server and said at least one storage device are interconnected via a storage area network (SAN) (paragraph 0023).

As per claim 131, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at least one storage device is a network attached storage (NAS) device (paragraph 0023).

As per claim 132, Tabuchi teaches a method for data backup and recovery according to claim 129 and wherein said at least one data communication monitor monitors data communications between said at least one server and said at least one storage device over said LAN (paragraph 0023).

As per claim 133, Tabuchi teaches a method for data backup and recovery according to claim 130 and wherein said at least one data communication monitor monitors data communications between said at least one server and said at least one storage device over said SAN (paragraph 0023).

As per claim 134, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at least one server comprises said at least one data communication monitor (paragraph 0030).

As per claim 135, Tabuchi teaches a method for data backup and recovery according to claim 69 and wherein said at least one storage device comprises said at least one data communication monitor (paragraph 0030).

As per claim 136, Tabuchi teaches a method for data backup and recovery according to claim 130 and wherein said SAN comprises said at least one data communication monitor (paragraph 0023).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 4, 5, 8, 11-29, 31, 33, 34, 37, 40, 41, 43-58, 70, 72, 73, 76, 79, 80-97, 99, 101, 102, 105, 108-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabuchi in view of Kern et al. U.S. Patent 6, 463, 501.

As per claim 2, Tabuchi teaches a data backup and recovery system according to claim 1. However, Tabuchi doesn't explicitly teach wherein at least one of said at least one data communication monitor is located other than only at said at least one storage device. Kern does teach wherein at least one of said at least one data communication monitor is located other than only at said at least one storage device (column 4, lines 29-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 4, Tabuchi teaches a data backup and recovery system according to claim 2. However, Tabuchi doesn't explicitly teach wherein said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device. Kern does teach wherein said data communication monitors also provide at least part of said data communications to said at least one data recovery device (column 4, lines 29-61). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 5, Tabuchi teaches a data backup and recovery system according to claim 1. However, Tabuchi doesn't explicitly teach wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel. Kern teaches wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel (column 4, lines 19-22, wherein, if the recovery device is at the secondary storage device then the primary data is received at the recovery device and the recovery storage device concurrently). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 8, Tabuchi teaches a data backup and recovery system according to claim 1. However, Tabuchi doesn't explicitly teach wherein individual ones of said at least one data communication monitor are associated with individual ones of said at least one server. Kern teaches wherein individual ones of said at least one data communication monitors are associated

with individual ones of said at least one server (column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 11, Tabuchi teaches a data backup and recovery system according to claim 10. However, Tabuchi doesn't explicitly teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 12, Tabuchi teaches a data backup and recovery system according to claim 10. However, Tabuchi doesn't explicitly teach wherein said network is a public network Kern teaches wherein said network is a public network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 13, Tabuchi teaches a data backup and recovery system according to claim 1. However, Tabuchi doesn't explicitly teach wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a storage area network. Kern teaches wherein at least one of said control information and said at least one data communications is communicated from at least one said data communication monitor to said at least one data recovery device via a storage area network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 14, Tabuchi teaches a data backup and recovery system according to claim 1. However, Tabuchi doesn't explicitly teach wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device Kern teaches wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device (column 3, lines 33-36; column 2, lines 58-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency

across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 15, Tabuchi teaches a data backup and recovery system according to claim 1. However, Tabuchi doesn't explicitly teach also comprising at least one LOG storage device wherein said at least one LOG storage device comprise at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network. Kern teaches also comprising at least one LOG storage device wherein said at least one LOG storage device comprise at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network (column 4, lines 46-61, wherein, the journal with consistency groups of Kern is equivalent to a log device). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 16, Tabuchi teaches a data backup and recovery system according to claim 15. However, Tabuchi doesn't explicitly teach wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device. Kern teaches wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was

made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 17, Tabuchi teaches a data backup and recovery system according to claim 16. However, Tabuchi doesn't explicitly teach wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one storage device. Kern teaches wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 18, Tabuchi teaches a data backup and recovery system according to claim 17. However, Tabuchi doesn't teach having said at least one LOG storage device such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device. Kern teaches having said at least one LOG storage device such that if either said control information or said data communications or both are

prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 19, Tabuchi teaches a data backup and recovery system according to claim 18. However, Tabuchi doesn't teach wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device. Kern teaches wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 20, Tabuchi teaches a data backup and recovery system according to claim 17. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves said at least part of said data communications from at least LOG one storage device for the purpose of

storing said data to at least one data recovery storage device associated therewith in a time ordered manner. Kern teaches wherein said at least one data recovery device retrieves said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 21, Tabuchi teaches a data backup and recovery system according to claim 18. However, Tabuchi doesn't teach wherein said at least part of said data communications is communicated from said data communication monitors to said at least one storage device LOG via a network. Kern teaches wherein said at least part of said data communications is communicated from said data communication monitors to said at least one storage device LOG via a network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 22, Tabuchi teaches a data backup and recovery system according to claim 21. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 23, Tabuchi teaches a data backup and recovery system according to claim 21. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 24, Tabuchi teaches a data backup and recovery system according to claim 18. However, Tabuchi doesn't teach wherein at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network. Kern teaches wherein at least part of said data communications is communicated from said at least one data communication monitors to said at least one LOG storage device via said storage area network (column 9,lines 21-36; column 5,

lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 25, Tabuchi teaches a data backup and recovery system according to claim 17. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one storage device LOG for the purpose of storing said data to at least one data recovery storage device associated therewith in said time ordered manner. Kern teaches wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one storage device LOG for the purpose of storing said data to at least one data recovery storage device associated therewith in said time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 26, Tabuchi teaches a data backup and recovery system according to claim 25. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said data communication monitors to said

at least one storage device LOG via a network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said data communication monitors to said at least one storage device LOG via a network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 27, Tabuchi teaches a data backup and recovery system according to claim 26. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 28, Tabuchi teaches a data backup and recovery system according to claim 26. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill

in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 29, Tabuchi teaches a data backup and recovery system according to claim 25. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said data communication monitors to said at least one storage device LOG via said storage area network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said data communication monitors to said at least one storage device LOG via said storage area network (column 9,lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 31, Tabuchi teaches a data backup and recovery system according to claim 30. However, Tabuchi doesn't teach wherein at least one of said at least one data communication monitor is located other than at said at least one storage device. Kern teaches wherein at least one of said at least one data communication monitor is located other than at said at least one storage device (column 4, lines 29-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the

Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 33, Tabuchi teaches a data backup and recovery system according to claim 31. However, Tabuchi doesn't teach wherein said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device. Kern teaches wherein said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device (column 4, lines 29-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 34, Tabuchi teaches a data backup and recovery system according to claim 30. However, Tabuchi doesn't teach wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel. Kern teaches wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel (column 4, lines 19-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data

consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 37, Tabuchi teaches a data backup and recovery system according to claim 30. However, Tabuchi doesn't teach wherein individual ones of said at least one data communication monitor are associated with individual ones of said at least one server. Kern teaches wherein individual ones of said at least one data communication monitor are associated with individual ones of said at least one server (column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 40, Tabuchi teaches a data backup and recovery system according to claim 39. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 5, lines 20-21; column 9, lines 21-36; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 41, Tabuchi teaches a data backup and recovery system according to claim 39. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches

wherein said network is a public network (column 5, lines 20-21; column 9, lines 21-36; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 43, Tabuchi teaches a data backup and recovery system according to claim 30. However, Tabuchi doesn't teach wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device. Kern teaches wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device (column 3, lines 33-36; column 2, lines 58-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 44, Tabuchi teaches a data backup and recovery system according to claim 30. However, Tabuchi doesn't teach also comprising at least one LOG storage device wherein said at least one LOG storage device comprise at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said

at least one storage device via a storage area network. Kern teaches also comprising at least one LOG storage device wherein said at least one LOG storage device comprise at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 45, Tabuchi teaches a data backup and recovery system according to claim 44. However, Tabuchi doesn't teach wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device. Kern teaches wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 46, Tabuchi teaches a data backup and recovery system according to claim 45. However, Tabuchi doesn't teach wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one

storage device. Kern teaches wherein said data communications stored to said at least one LOG storage device comprises data updates sent by said at least one server to said at least one of storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 47, Tabuchi teaches a data backup and recovery system according to claim 44. However, Tabuchi doesn't teach having said at least one LOG storage device such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device. Kern teaches having said at least one LOG storage device such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the

importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 48, Tabuchi teaches a data backup and recovery system according to claim 47. However, Tabuchi doesn't teach wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device. Kern teaches wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 49, Tabuchi teaches a data backup and recovery system according to claim 46. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in said time ordered manner. Kern teaches wherein said at least one data recovery device retrieves said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in said time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process.

One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 50, Tabuchi teaches a data backup and recovery system according to claim 47. However, Tabuchi doesn't teach wherein said at least part of said data communications is communicated from said at least one data communication monitor to said at least LOG one storage device via a network. Kern teaches wherein said at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via a network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 51, Tabuchi teaches a data backup and recovery system according to claim 50. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi

because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 52, Tabuchi teaches a data backup and recovery system according to claim 50. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 53, Tabuchi teaches a data backup and recovery system according to claim 47. However, Tabuchi doesn't teach wherein at least part of said data communications is communicated from said at least one data communication monitors to said at least one LOG storage device via said storage area network. Kern teaches wherein at least part of said data communications is communicated from at least one said data communication monitors to said at least one LOG storage device via said storage area network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 54, Tabuchi teaches a data backup and recovery system according to claim 46. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner. Kern teaches wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 55, Tabuchi teaches a data backup and recovery system according to claim 54. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitors to said at least one LOG storage device via a network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitors to said at least one LOG storage device via a network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated

to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 56, Tabuchi teaches a data backup and recovery system according to claim 55. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 57, Tabuchi teaches a data backup and recovery system according to claim 55. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 58, Tabuchi teaches a data backup and recovery system according to claim 54. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said at least one data communication

monitors to said at least one LOG storage device via said storage area network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitors to said at least one LOG storage device via said storage area network (column 9, lines 21-36; column 5, lines 20-21; column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 70, Tabuchi teaches a method for data backup and recovery according to claim 69. However, Tabuchi doesn't teach wherein at least one of said at least one data communication monitor is provided other than only at said at least one storage device. Kern teaches wherein at least one of said at least one data communication monitor is provided other than only at said at least one storage device (column 4, lines 29-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 72, Tabuchi teaches a method for data backup and recovery according to claim 70. However, Tabuchi doesn't teach wherein said data communication monitor also provides at least part of said data communications to said at least one data recovery device. Kern

teaches wherein said data communication monitor also provides at least part of said data communications to said at least one data recovery device (column 4, lines 29-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 73, Tabuchi teaches a method for data backup and recovery according to claim 69. However, Tabuchi doesn't teach wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel. Kern teaches wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel (column 4, lines 29-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 76, Tabuchi teaches a method for data backup and recovery according to claim 69. However, Tabuchi doesn't teach wherein individual ones of said at least one data communication monitors are associated with individual ones of said at least one server. Kern teaches wherein individual ones of said at least one data communication monitors are associated

with individual ones of said at least one server (column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 79, Tabuchi teaches a method for data backup and recovery according to claim 78. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 80, Tabuchi teaches a method for data backup and recovery according to claim 78. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 81, Tabuchi teaches a method for data backup and recovery according to claim 69. However, Tabuchi doesn't teach wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a storage area network. Kern teaches wherein at least one of said control information and said data communications is communicated from at least one said data communication monitor to at least one said data recovery device via a storage area network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 82, Tabuchi teaches a method for data backup and recovery according to claim 69. However, Tabuchi doesn't teach wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device. Kern teaches wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device (column 3, lines 33-36; column 2, lines 58-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency

across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 83, Tabuchi teaches a method for data backup and recovery according to claim 69. However, Tabuchi doesn't teach also comprising storing at least control information on at least one LOG storage device, said at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network. Kern teaches also comprising storing at least control information on at least one LOG storage device, said at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 84, Tabuchi teaches a method for data backup and recovery according to claim 83. However, Tabuchi doesn't teach wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device. Kern teaches wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would

have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 85, Tabuchi teaches a method for data backup and recovery according to claim 84. However, Tabuchi doesn't teach wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one storage device. Kern teaches wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one storage device (column 4, lines 46-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 86, Tabuchi teaches a method for data backup and recovery according to claim 85. However, Tabuchi doesn't teach such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device. Kern teaches such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data

communications or both from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 87, Tabuchi teaches a method for data backup and recovery according to claim 86. However, Tabuchi doesn't teach wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device. Kern teaches wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 88, Tabuchi teaches a method for data backup and recovery according to claim 85. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner. Kern teaches wherein said at least one data recovery device retrieves

said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 89, Tabuchi teaches a method for data backup and recovery according to claim 86. However, Tabuchi doesn't teach wherein said at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via a network. Kern teaches wherein said at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via a network (column 4, lines 29-45; column 9, lines 21-36; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 90, Tabuchi teaches a method for data backup and recovery according to claim 89. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 4, lines 29-45; column 9, lines 21-36;

column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 91, Tabuchi teaches a method for data backup and recovery according to claim 89. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 4, lines 29-45; column 9, lines 21-36; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 92, Tabuchi teaches a method for data backup and recovery according to claim 86. However, Tabuchi doesn't teach wherein at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network. Kern teaches wherein at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network (column 4, lines 29-45; column 9, lines 21-36; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of

Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 93, Tabuchi teaches a method for data backup and recovery according to claim 85. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner. Kern teaches wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 94, Tabuchi teaches a method for data backup and recovery according to claim 93. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via a network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG

storage device via a network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 95, Tabuchi teaches a method for data backup and recovery according to claim 94. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 96, Tabuchi teaches a method for data backup and recovery according to claim 94. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 97, Tabuchi teaches a method for data backup and recovery according to claim 93. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 99, Tabuchi teaches a method for data backup and recovery according to claim 98. However, Tabuchi doesn't teach wherein at least one of said at least one data communication monitor is located other than at said at least one storage device. Kern teaches wherein at least one of said at least one data communication monitor are located other than at said at least one storage device (column 4, lines 29-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data

consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 101, Tabuchi teaches a method for data backup and recovery according to claim 99. However, Tabuchi doesn't teach wherein said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device. Kern teaches wherein said at least one data communication monitor also provides at least part of said data communications to said at least one data recovery device (column 4, lines 29-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 102, Tabuchi teaches a method for data backup and recovery according to claim 98. However, Tabuchi doesn't teach wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel. Kern teaches wherein said at least one data recovery device is operative to receive said at least control information and to store data on said at least one data recovery storage device in parallel (column 4, lines 19-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data

consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 105, Tabuchi teaches a method for data backup and recovery according to claim 98. However, Tabuchi doesn't teach wherein individual ones of said at least one data communication monitor are associated with individual ones of said at least one server. Kern teaches wherein individual ones of said at least one data communication monitor are associated with individual ones of said at least one server (column 4, lines 29-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 108, Tabuchi eaches a method for data backup and recovery according to claim 107 However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 109, Tabuchi teaches a method for data backup and recovery according to claim 107. However, Tabuchi doesn't teach wherein said network is a public network. Kern

teaches wherein said network is a public network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 110, Tabuchi teaches a method for data backup and recovery according to claim 98. However, Tabuchi doesn't teach wherein at least one of said control information and said data communications is communicated from at least one said data communication monitor to said at least one data recovery device via a storage area network. Kern teaches wherein at least one of said control information and said data communications is communicated from said at least one data communication monitor to said at least one data recovery device via a storage area network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 111, Tabuchi teaches a method for data backup and recovery according to claim 98. However, Tabuchi doesn't teach wherein said at least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device. Kern teaches wherein said at

least one data communication monitor provides at least part of said data communications to said at least one data recovery storage device other than via said at least one data recovery device (column 3, lines 33-36; column 2, lines 58-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 112, Tabuchi teaches a method for data backup and recovery according to claim 98. However, Tabuchi doesn't teach also comprising storing at least control information on at least one LOG storage device, said at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network. Kern teaches also comprising storing at least control information on at least one LOG storage device, said at least control information bearing a time mark regarding data communications between corresponding ones of said at least one server and said at least one storage device via a storage area network (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 113, Tabuchi teaches a method for data backup and recovery according to claim 112. However, Tabuchi doesn't teach wherein at least one said data communication monitor also stores at least part of said data communications to said at least one LOG storage device. Kern teaches wherein said at least one data communication monitor also stores at least part of said data communications to said at least one LOG storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 114, Tabuchi teaches a method for data backup and recovery according to claim 113. However, Tabuchi doesn't teach wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one storage device. Kern teaches wherein said data communications stored to said at least one LOG storage device comprise data updates sent by said at least one server to said at least one storage device (column 4, lines 46-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 115, Tabuchi teaches a method for data backup and recovery according to claim 114. However, Tabuchi doesn't teach having said at least one LOG storage device such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device. Kern teaches having said at least one LOG storage device such that if either said control information or said data communications or both are prematurely erased from said at least one data recovery device due to a failure or other event, said at least one data recovery device restores either said control information or said data communications or both from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 116, Tabuchi teaches a method for data backup and recovery according to claim 115. However, Tabuchi doesn't teach wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device. Kern teaches wherein said at least one data recovery device resumes its activities with said control information or said data communications or both restored from said at least one LOG storage device (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the

Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 117, Tabuchi teaches a method for data backup and recovery according to claim 114. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in said time ordered manner. Kern teaches wherein said at least one data recovery device retrieves said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in said time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 118, Tabuchi teaches a method for data backup and recovery according to claim 115. However, Tabuchi doesn't teach wherein said at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via a network. Kern teaches wherein said at least part of said data communications is communicated from said at least one data communication monitor to said at

least one LOG storage device via a network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 119, Tabuchi teaches a method for data backup and recovery according to claim 118. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 120, Tabuchi teaches a method for data backup and recovery according to claim 118. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 121, Tabuchi teaches a method for data backup and recovery according to claim 115. However, Tabuchi doesn't teach wherein at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network. Kern teaches wherein at least part of said data communications is communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 122, Tabuchi teaches a method for data backup and recovery according to claim 114. However, Tabuchi doesn't teach wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner. Kern teaches wherein said at least one data recovery device retrieves both said control information and said at least part of said data communications from at least one LOG storage device for the purpose of storing said data to at least one data recovery storage device associated therewith in a time ordered manner (column 5, lines 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill

in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 123, Tabuchi teaches a method for data backup and recovery according to claim 122. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via a network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via a network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 124, Tabuchi teaches a method for data backup and recovery according to claim 123. However, Tabuchi doesn't teach wherein said network is a private network. Kern teaches wherein said network is a private network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi

because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 125, Tabuchi teaches a method for data backup and recovery according to claim 123. However, Tabuchi doesn't teach wherein said network is a public network. Kern teaches wherein said network is a public network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

As per claim 126, Tabuchi teaches a method for data backup and recovery according to claim 122. However, Tabuchi doesn't teach wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network. Kern teaches wherein both said control information and said at least part of said data communications are communicated from said at least one data communication monitor to said at least one LOG storage device via said storage area network (column 9, lines 21-36; column 4, lines 29-45; column 5, lines 20-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Kern process to the Tabuchi process. One of ordinary skill in the art would have been motivated to combine the Kern process to the process of Tabuchi because Kern teaches the importance of insuring data consistency across groups of

storage areas (column 3, lines 31-33); this is a shared explicit desire taught by Tabuchi (paragraph 0013).

Response to Arguments

5. Applicant's arguments with respect to claims 1-136 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See attached PTO-892.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. McCarthy whose telephone number is (571)272-3651. The examiner can normally be reached on M-F, 9 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csm
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